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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/931,317	08/16/2001	Alan P. Carpenter JR.	PH-7103	4231

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STEPHEN B. DAVIS
BRISTOL-MYERS SQUIBB COMPANY
PATENT DEPARTMENT
P O BOX 4000
PRINCETON, NJ 08543-4000

EXAMINER

HARTLEY, MICHAEL G

ART UNIT PAPER NUMBER

1616

DATE MAILED: 02/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/931,317	Applicant(s) CARPENTER ET AL.	
	Examiner Michael G. Hartley	Art Unit 1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-62 and 69 is/are allowed.
- 6) ☒ Claim(s) 63-68 and 70-72 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>5</u> . | 6) <input type="checkbox"/> Other: _____ |

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Response to Amendment

The preliminary amendment filed 8/16/2001 has been entered. The specification has been amended as requested. Claims 46, 51, 55, 59 and 63 have been amended.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 70-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 70-72 provides for the use of a formulation, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 70-72 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 63, 64 and 68 are rejected under 35 U.S.C. 102(b) as being anticipated by Schneider (US 5,271,928).

Schneider discloses formulations comprising a container comprising an aqueous solution comprising at least one surfactant and liquid filled liposomes and a means for introducing a gas into the aqueous solution, e.g., example 5. The formulations disclosed by Schneider include liquid filled liposomes (e.g., see column 4, lines 28+) and also include components which are encompassed by "surfactant" as claimed, since gelatin or albumin may be a surface active substance it is encompassed by the term "surfactant" as claimed. Schneider also discloses that in addition to the liposomes, the formulations may contain other surfactants as additives, see paragraph bridging columns 5-6. The formulations have a means for addition of a gas, e.g., air, see example 11. Thus, the formulations disclosed by Schneider contain the same components as the kit as claimed, even though the formulations of Schneider are used to make formulations which are not the same as those claimed. The formulations disclosed by Schneider include noble gases, fluorinated gas, etc., see example 9 and column 6, lines 29+. The formulations disclosed by Schneider must have at least some "head space" for exposure to the gas.

While the rejected claims are dependent upon claims which are free of the art of record, this is because the limitation referring to the base claim is only an intended use recitation. The recitation that the kit is "for the preparation of a formulation of claim 1" is a recitation of the intended use of the claimed invention and must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963). While the formulations (or kits) disclosed by Schneider are not used for preparing a composition as set forth in the base claim (i.e., claim 1) of the rejected claims, the actual formulation contains the same components as the claimed kit. Thus, the only difference is the intended use of the claimed kits, e.g., for preparing a formulation of claim 1. Therefore, while these claims are dependent on a claim which is free of the art of record, these claims are

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rejected because the only limitation brought into the claim by the dependency is one of intended use, which is not given patentable weight to over the art, since the art teaches formulations which have the same components as the claimed kits. Also, the recitation of "A kit" has not been given patentable weight because the recitation occurs in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). Further, the formulations disclosed by Schneider are vials for pharmaceutical use and would be within the scope of a "kit" as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 63-68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schneider (US 5,271,928) in view of Lambert (US 5,855,865) and Kabalnov (US 6,193,952).

Schneider discloses formulations comprising a container comprising an aqueous solution comprising at least one surfactant and liquid filled liposomes and a means for introducing a gas into the aqueous solution, as set forth above.

Schneider fails to specifically disclose the use of the types of gases in the headspace as claimed, (e.g., having the solubility as claimed, which would include perfluorocarbon gases) and/or the use of a perfluorocarbon or perfluoroether gas.

Lambert discloses that ultrasound contrast agents may contain various gases in an equivalent manner, and that perfluorocarbon gases are preferred because these gases greatly increase the stability

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of the gas-filled microparticles due to their insolubility, see columns 1-2. Lambert further teaches that the addition of the insoluble gas into the head space increases the shelf life of the formulations (or kits), see column 7, lines 18+.

Kabalnov discloses ultrasound contrast agents comprise perfluoroethers in an equivalent manner to other perfluorocarbon gases, see abstract and columns 3-9, wherein the perfluoroether helps reduce the loss of contrast due to the filling gas condensation, see column 3, lines 54+. Kabalnov also teaches that it is known in the art to fill the head space with an insoluble gas, see example 1.

It would have been obvious to one of ordinary skill in the art to have used insoluble gases (e.g., perfluorocarbons and/or perfluoroethers) and/or added such gases to the head space in the formulations disclosed by Schneider because it is well known in the art that perfluorocarbons or perfluoroethers are improved gases for use in ultrasound contrast agents because these gases are insoluble and therefore increase the stability of the contrast agents *in vivo* and/or provide extended contrast, as shown by Lambert (perfluorocarbons) and Kabalnov (perfluoroethers) and because it is well known to add these insoluble gases to the head space into the head space to increase the shelf life of the formulations (or kits), as shown by Lambert and Kabalnov.

Allowable Subject Matter

Claims 1-62 and 69 are allowed. The primary reason for allowance is the inclusion of at least one of a lipid and a surfactant absorbed onto the surface of the gas-filled microspheres in the formulations as claimed. The closest prior art is Schneider US 5,271,928 which discloses formulations comprising gas-filled microbubbles and liquid-filled liposomes which stabilize the microbubbles, but fail to include a surfactant or lipid absorbed onto the surface of the microbubbles. There is no teaching in the prior art to modify the formulations disclosed by Schneider to further include least one of a lipid and a surfactant absorbed onto the surface of gas-filled microspheres, to yield the formulations as claimed. The methods of use and making thereof are also found allowable as they require the same limitations of the formulations.

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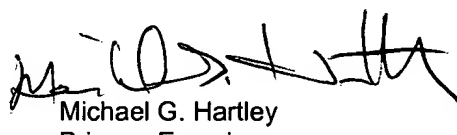
Suggestions: The application may be placed in condition for allowance by canceling claims 63-63 and 70-72.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael G. Hartley whose telephone number is (703) 308-4411. The examiner can normally be reached on M-F, 7:30-5, off alternative Mondays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jose G. Dees can be reached on (703) 308-4628. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-4556 for regular communications and (703) 308-4556 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1235.


Michael G. Hartley
Primary Examiner
Art Unit 1616

MH
February 4, 2003